**Task 3.** Petya moves toy cars across the cellular field. At a certain moment, he recorded the position of all the cars and decided to assemble them in one horizontal row on adjacent cells in the minimum number of moves (one move - moving one car to an adjacent field horizontally or vertically). The cars must occupy one horizontal line, standing one behind the other (so that their final positions are (x,y), (x+1,y), ...(x+n-1,y) for some x and y). Let us add that in the final arrangement of the machines along the horizontal line, x and y can be arbitrary. The task is to minimize the total number of movements of all machines to achieve the specified configuration. Two or more cars cannot be in the same position at the same time.

**Input data:** The data is located in the **input.txt** file.

The first line contains an integer n, 1<=n<=1000 is the number of cars.

The next n lines contain the coordinates of the initial positions of the cars: for each i, 1<=i<=n, the i+1st line contains a pair of integers x[i] and y[i], separated by a space, representing the coordinates of the i-th cars, -1000<=x[i],y[i]<=1000.

**Output data:** The answer (one integer - the minimum total number of movements, as a result of which the cars will be located on the same horizontal line) must be written to the file **output.txt**.

**Program execution time:** no more than 1 second.

**Note:** all characters in text files must be 1 byte in size.

**Examples:**

| Example 1 | input | output |
|---|---|---|
| | 4 | 8 |
| | 3 3 | |
| | 4 4 | |
| | 4 0 | |
| | 1 1 | |